



EUROPA CLIPPER

Europa Clipper

Rules of the Road for the Europa Clipper Science Team

Revision A

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Electronic Signature in Jira
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2022-09-15
Date

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CHANGE LOG

DATE	SECTIONS CHANGED	REASON FOR CHANGE	REVISION
4/13/2018	ALL	Incorporates comments and feedback from PSG, with an additional pass-through by PIs and TWG co-chairs.	Initial Release
	2.1.3.4.; 4.2.5; 4.3.1; 4.3.2	Fixed typo in 2.1.3.4. Sections 4.x.x have been updated to align with the Initial Release of the Communications Plan.	Fixed in version released to PSG
09/7/2022	Part 1	Code of Conduct augmented.	Revision A URS310927 CL#22-4620
	2.1.2.3.	Project Staff Scientist role further defined, as per JPL rules.	
	2.1.3.3	Added section to define Team Leader (TL).	
	Throughout	Reference TL in parallel with PI, including in Fig. 1.	
	2.1.3.5	Emeritus Co-I (ECo-I) defined.	
	2.1.4	Removes Collaborator as a role (now a Professional Affiliate).	
	2.2	Affiliate team member criteria and approval clarified.	
	2.2.1	Combines SME and Collaborator with Professional Affiliate.	
	2.2.1	Professional Affiliate role requirements and roll-off clarified.	
	2.2.2	Postdoc and grad affiliate nominations review and approval.	
	2.2.2	Clarifies role of short-term grad students or postdocs.	
	3.1.1-3.1.2	Thematic Working Group charges added.	
	3.1.1-3.1.2	Clarifies relationship between Habitability and other TWGs.	
	3.1.4	Focus group – TWG relationship revised.	
	3.1.6	More explicit definition of the Facilitator role.	
	3.2	Science Team Meeting proceedings are considered private.	
	4.2; 4.2.1– 4.2.5	Updates publication policies for clarification, including with regard to special issues and student-led publications.	
	4.2.6	Addition of multi-investigation abstracts and lead time.	
	Throughout	Miscellaneous typos fixed and text clarifications made.	

About this Document

The Rules of the Road document provides team policies on data sharing, publications, professional code of conduct, and science team responsibilities, for the Europa Clipper Science Team, which is composed of Project Science Group (PSG) members and Team Affiliates. There is one “Rules of the Road” document for the whole Europa Clipper Science Team. This document has been prepared by the Europa Clipper Project Science Team, in collaboration with the Europa Clipper Science Team.

This document is intended to provide open, transparent, and equitable operating rules for the Europa Clipper Science Team for the duration of the Europa Clipper project, to enable strong working relationships and to ensure that the highest quality science is delivered from the project. All Europa Clipper Science Team members are required to abide by and uphold the policies and practices described in this document.

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Part 1: Code of Conduct

The Europa Clipper mission will span more than a decade, and there will be many challenges and changes to team membership along the way. It is also likely that there will be significant turnover of the Europa Clipper Science Team during the lifecycle of the project. As with any long-term project, both the explicit rules and the implicit norms of behavior will evolve over time – but this evolution will be greatly shaped by the chosen starting point. Therefore, as we embark upon what will be one of our generation’s great missions of exploration, it is imperative that all Europa Clipper Science Team members agree to act in an appropriate, professional, and respectful manner in all interactions, and actively work towards generation of a culture that best enables all members and affiliates to participate and contribute to their fullest potential.

Upon the implementation of this document, or joining the Europa Clipper Science Team in any capacity, each team member agrees to:

- Treat others with respect. This includes respect toward others’ opinions, contributions, emotions, and persons. Demonstrate respect in your actions, and expect respect (both toward yourself and to others) in the actions of others.
- Be an active ally to all team members, students, meeting attendees and guests, guarding against all forms of harassment, regardless of gender, age, sexual orientation, disability, physical appearance, race, religion, or other protected status.
- Actively contribute towards an inclusive, equitable, and accessible environment.
- Demonstrate support for your teammates, including interceding for others unwilling or unable to advocate for themselves.
- Calmly consider your actions when challenged by someone who feels that those actions have caused harm.
- Seek appropriate mediation when needed to resolve a disagreement, and participate fully in it.

Part 2: The Europa Clipper Science Team

*The Europa Clipper Science Team is one team working to fulfill the science goal and objectives of the Europa Clipper mission. The Europa Clipper Science Team is composed of members of its Investigation Teams, Project Science Team, Team Affiliates, and any Participating Scientists, as defined below and illustrated in **Figure 1**. All Europa Clipper Science Team members are welcome and encouraged to participate in the strategic planning efforts of the team through the Thematic Working Groups (section 3.1) and in Project Science Group (PSG) meetings and other cross-investigation meetings of the science team (section 3.2). Data products (section 4.1) and publication plans (section 4.2) of team members will be visible and accessible across the entire Europa Clipper Science Team, within the terms of these Rules of the Road.*

It is important that the roles, responsibilities, and relationships of the Europa Clipper Science Team members are clearly defined and known across the team, as is the basis for this part of the Rules of the Road.

Through the lifetime of the mission, it is anticipated that additional science expertise may be required in some areas. In addition, it is expected that many students and postdocs will help with research, as well as other elements of the mission, gaining valuable experience from being a part of the science team. Thus, clear and consistent policies are needed for adding such personnel to the Europa Clipper Science Team.

Occasionally, a Europa Clipper Science Team member may be unable to continue as a science team member (e.g., no longer be an affiliate, resign, pass away, etc.). In the case of departure from the team, it is important that the process for terminating team membership is clear.

Moving from one institution to another generally does not affect a Europa Clipper Science Team member's team status, except with regard to students and postdocs (section 2.2.2.); however, membership within the Project Science Team is a probable exception, given that affiliation with Caltech/JPL or the Johns Hopkins University Applied Physics Laboratory (JHUAPL) is required. Appropriate financial arrangements of an institutional move will need to be negotiated among the affected parties. Anyone departing the Europa Clipper Science Team (including postdocs and graduate students) will have no further access to science team databases nor further team-related privileges.

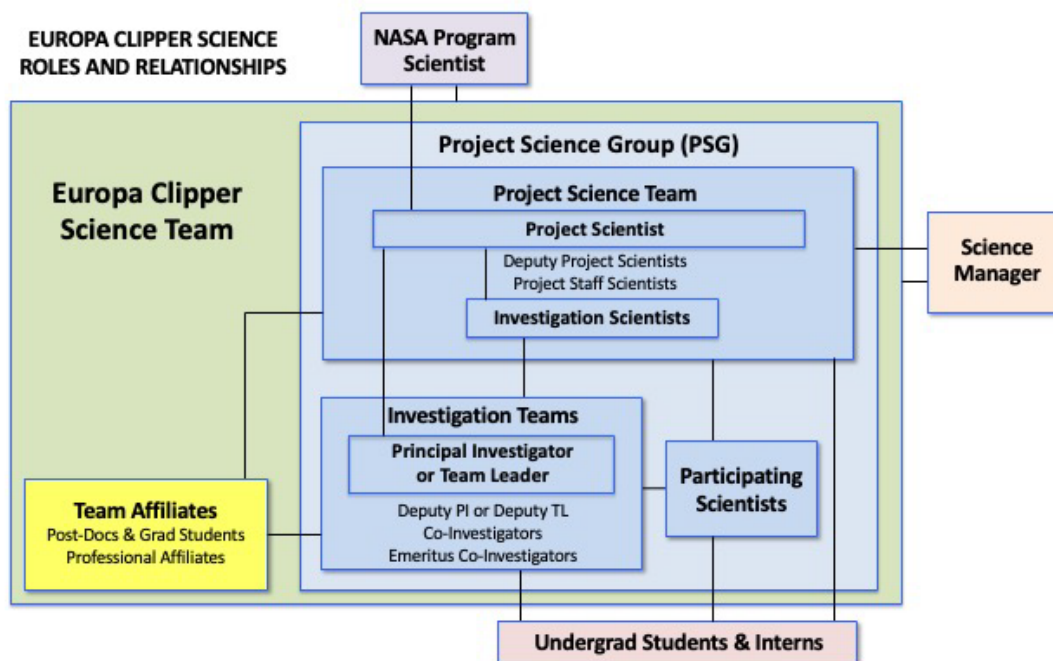


Figure 1. Roles and relationships among the Europa Clipper Science Team members and associated participants. The colors assist in distinguishing groupings, and solid lines designate the primary communication pathways.

2.1. The Project Science Group (PSG)

The Project Science Group (PSG) actively participates in the Europa Clipper mission, working together to achieve the mission's overall science goals and objectives.

2.1.1. NASA Program Scientist

Role: The NASA Program Scientist represents the scientific interests of the Europa Clipper Project at NASA Headquarters and is an *ex officio* member of the Europa PSG, serving as its vice-chair. The NASA Program Scientist communicates scientific matters between NASA Headquarters and the Europa Clipper Project, notably via the Project Scientist.

Addition and Departure: The NASA Program Scientist is appointed by, and serves at the pleasure of, the NASA Planetary Science Division Director.

2.1.2. The Project Science Team

Role: The Project Science Team is composed of the Project Scientist (PS), Deputy Project Scientists (DPSs), Project Staff Scientists (PSSs), and Investigation Scientists (ISs). Under the leadership of the Project Scientist, the Project Science Team works to ensure the scientific

integrity and overall scientific success of the mission. The individual roles (sections 2.1.2.1-4) are summarized here and further detailed in the Europa Clipper Science Management Plan (JPL D-101644).

Addition: New Project Science Team personnel will generally be added by the Project Scientist to replace existing personnel or to fill a critical need, in consultation with the Project Manager and appropriate institutional personnel. Formal approval by the NASA Program Scientist is needed only in the case of replacement of the Project Scientist.

Departure: If a Project Science Team member leaves their particular role on the Europa Clipper Science Team, they will not continue as part of the Europa Clipper Science Team, unless they already have or move into a different role, for example as a Team Affiliate.

2.1.2.1. Project Scientist (PS)

Role: The Project Scientist (PS) is responsible for the scientific integrity and overall scientific success of the mission. The PS represents the PSG team members to the Project Manager and to NASA and is the scientific spokesperson for the Project. In carrying out these responsibilities, the PS ensures that the scientific return of the project is maximized within the project constraints. Moreover, the PS will concur, with the Project Manager, in all engineering and programmatic decisions that affect mission success or the integrity of scientific investigations. The PS organizes, manages, chairs the Project Science Group (PSG), and calls on appropriate members of the PSG to make science recommendations to the project via the PS, including on science requirements, approaches, and priorities.

2.1.2.2. Deputy Project Scientist (DPS)

Role: A Deputy Project Scientist (DPS) has the authority and responsibility of the Project Scientist in those areas the DPS is tasked to work in, or when acting in the absence of the Project Scientist. One DPS will be appointed from JPL, and one from JHUAPL.

2.1.2.3. Project Staff Scientist (PSS)

Role: Project Staff Scientists assist the Project Scientist and Deputy Project Scientists in carrying out their assigned tasks. They generally have a long-term commitment to the project, and they report on day-to-day project issues to the Project Science Team members whose task(s) they are working on.

2.1.2.4. Investigation Scientist (IS)

Role: Each investigation team has one or more IS(s) assigned to serve as science liaison between the investigation team and other elements of the project. The IS is the primary interface for scientific coordination between the assigned investigation team or subsystem and other elements of the project.

2.1.3. Investigation Team

Role: An Investigation Team, overseen and managed by a Principal Investigator (PI) or Team Leader (TL), is a team of scientists selected by NASA to conduct an investigation or set of investigations as a contribution to the Europa Clipper mission. An Investigation Team is commonly referred to as an Instrument Team in the context of constructing and operating hardware necessary to conduct the scientific investigation(s).

2.1.3.1 Principal Investigator (PI)

Role: A Principal Investigator (PI) is responsible for managing and overseeing the quality and success of the selected science investigation.

Adding: It is anticipated that PIs will serve for the duration of the mission. In the rare instance that a PI is to be replaced, the appointment will be made by the NASA Associate Administrator for Science, in consultation with the NASA Program Scientist and the Project Scientist.

Departure: If a PI leaves their particular role on the Europa Clipper Science Team, they will not continue as part of the Europa Clipper Science Team, nor shall they have any further access to science team databases nor further team-related privileges, unless they move into a different role, for example as a Co-Investigator (Co-I, section 2.1.3.4) or Emeritus Co-Investigator (ECo-I, section 2.2.3.5).

2.1.3.2 Team Leader (TL)

Role: A Team Leader (TL) is responsible for managing and overseeing the quality and success of a science investigation for which the instrument hardware is provided by the Europa Clipper Project. In subsequent sections of these Rules of the Road, a TL is considered a parallel counterpart to a PI in all respects, unless explicitly stated otherwise.

Adding: A TL is appointed by NASA for a particular term or portion (phase or phases) of the mission. A TL's appointment and nominal term is determined by the NASA Associate Administrator for Science, in consultation with the Program Scientist and Project Scientist.

Departure: If a TL leaves their particular role on the Europa Clipper Science Team, they will not continue as part of the Europa Clipper Science Team, nor shall they have any further access to science team databases nor further team-related authorship privileges, unless they already have or move into a different role, for example as a Co-Investigator or ECo-I.

2.1.3.3. Deputy Principal Investigator (DPI); Deputy Team Leader (DTL)

Role: A Deputy Principal Investigators (DPI) or Deputy Team Leader (DTL) is a Co-I who has the ability to speak for the PI or TL on PSG-related matters when acting in those areas the Deputy PI or TL is tasked to work in, or in the absence of the PI or TL.

Adding: A Deputy Principal Investigator or Team Leader is selected by the PI or TL from among the corresponding investigation team's Co-Investigators, in consultation with the Project Scientist.

Departure: A Deputy Principal Investigator or Deputy Team Leader may be replaced by the PI or TL, in consultation with the Project Scientist, in which case the Deputy may retain their Co-Investigator role or another role on the science team (e.g., ECo-I).

2.1.3.4. Co-Investigator (Co-I)

Role: A Co-Investigator (Co-I) is a critical member of an investigation team who contributes their unique expertise and/or capabilities. A Co-I for a given Investigation Team is managed by the PI or TL and must have a continuing role in the investigation throughout the mission.

Addition: New Co-Is may be proposed by an Investigation PI or TL if it is found that necessary expertise is missing, or if an existing Co-I needs to be replaced. The Project Scientist and the relevant PI or TL will assess whether the contribution of the proposed Co-I is critical to the success of the Investigation Team. Moreover, in consultation with the relevant Thematic Working Group (TWG) Co-Chairs (see section 3.1), the Project Scientist will assess and determine whether the contribution benefits the overall Europa Clipper Science Team and does not unduly overlap existing Europa Science Team expertise. Sufficient resources must be identified before any new Co-Is are added to the team, including for Co-Is at non-US institutions. If the addition of a new Co-I is deemed necessary and appropriate, the Project Scientist will obtain the NASA Program Scientist's approval. If in agreement, the Program Scientist will take the recommendation(s) to the NASA Associate Administrator for Science for final approval (which can be a lengthy process).

Departure: If a Co-I departs their particular role on the Europa Clipper Science Team, they will not continue as part of the Europa Clipper Science Team, nor shall they have any further access to science team databases nor further team-related authorship privileges, unless they already have, or move into a different role, for example as an ECo-I. Periodically, PIs/TLs should evaluate whether any Co-I needs, availability, or other circumstances suggest that a Co-I should change status to an Emeritus Co-I (ECo-I, section 2.1.3.5). In rare circumstances, a PI or TL might have reason to recommend that a Co-I or ECo-I should be removed from their Investigation Team, they will consult with the Project Scientist, who will in turn will consult with the NASA Program Scientist for continued discussion and potential action. The Program Scientist may then take the recommendation for Co-I or ECo-I removal to the NASA Associate Administrator for Science for final approval.

2.1.3.5 Emeritus Co-Investigator (ECo-I)

Role: An Emeritus Co-Investigator (ECo-I) is a member of the team who provides critical expertise, experience, and advice to the science team, but who has a relatively low level of science team funding and activity. An ECo-I for a given Investigation Team is managed by

the PI or TL, attends PSGs, has full data rights, and can be involved in science team publications.

Addition: A Co-I may become an ECo-I when discussion with a PI or TL results in the conclusion that the expertise of that Co-I is still needed or desired, but at a lower level of involvement. Only an existing PSG team member may become an ECo-I. When a PI or TL brings recommendation to the Project Scientist that a given Co-I should move to ECo-I status, the Project Scientist will obtain the NASA Program Scientist's concurrence.

Departure: The departure of an ECo-I is the same as a Co-I (section 2.1.3.4).

2.1.4. Participating Scientist

Role: It is expected that NASA will select Participating Scientists for the tour operations of the Europa Clipper mission, scientists who will enhance the scientific return of the mission during its operational phase by expanding participation through new investigations that broaden and/or complement existing investigations. NASA formally manages any selected Participating Scientists, but at NASA's discretion, the Project Scientist and Science Manager* may be designated to oversee and manage Participating Scientists, in collaboration with the relevant PIs/TLs. Participating Scientists will be encouraged (though not required) to conduct research that involves data from more than one investigation.

Participating Scientists will be full members of the Europa Clipper Science Team, with all the same data sharing rights, and other privileges and responsibilities, as all other Europa Clipper Science Team members. Like all other Europa Clipper Science Team members, Participating Scientists must fully abide by these Rules of the Road.

If, at NASA's discretion, there are any other research personnel designated in the proposal team of a selected Participating Scientist, then these additional research personnel will be considered an Affiliate of the Europa Clipper Science Team, as per sections 2.2.1 and 2.2.2, with all the same data sharing rights, and other privileges and responsibilities, as all other Europa Clipper Science Team members. They, too, must fully abide by these Rules of the Road.

Addition: Details of a Participating Scientist program will be developed in the future at NASA's discretion, and it is expected that NASA serves as the selecting body. Once selected by NASA, Participating Scientists will be integrated into the Europa Science Team, including its Thematic Working Groups and planning processes.

Departure: If a Participating Scientist program is initiated by NASA, Participating Scientists whose period of performance has expired will no longer be considered Europa Clipper

*The Science Manager may or may not be a practicing scientist and, while not formally a member of the science team, is responsible for the contracts, finances, and logistics associated with the PIs and other science investigators during mission operations. The Science Manager also manages training and programmatic logistics for the PSG. The role of the Science Manager is fully defined in the Europa Clipper Science Management Plan (JPL D-101644).

Science Team members, unless they continue in a different role, for example as a Team Affiliate. If there are any additional member(s) of the Participating Scientist team (e.g., any Co-Is or Postdocs of the Participating Scientist) who had become Europa Clipper Team Affiliates, then they will depart at the same time as their Participating Scientist has departed.

2.2. Team Affiliates

Team Affiliates are additional researchers brought onto the Project to contribute towards Europa Clipper science investigations. These Team Affiliates may be temporary team members, and they may or may not receive project funding through the mission, as they may be funded through other appropriate sources. Management structure is determined by the specific affiliate type. Team Affiliates share Europa Clipper Science Team member privileges and must adhere to Europa Clipper Science Team policies, including these Rules of the Road.

Team Affiliates include two categories, Professional Affiliates, and Postdoctoral and Graduate Student Affiliates. Professional Affiliates provide expertise in an area not already covered elsewhere on the Science team. Postdoctoral and Graduate Student Affiliates include scientists under the mentorship of current Europa Clipper Science Team members, and whose expertise is necessary for one or more investigation teams and not already encompassed by the existing team.

Given the one-team approach of the Europa Clipper Science Team, nominations of potential Team Affiliates and their proposed roles need to be appropriate to the needs and available roles of the science team as a whole. Thus, it is important to ensure awareness, discussion, and approval of nominated Team Affiliates and their proposed roles across the PIs, TLs, and TWG Co-Chairs. Diversity in all aspects is expected in the nomination of Team Affiliates.

Team Affiliates are required to receive approval from whoever is funding their Europa Clipper Team work (e.g., PI/TL, PS, Co-I) in order to attend a PSG meeting (section 3.2).

2.2.1 Professional Affiliate

Role: A Professional Affiliate is a scientist whose expertise is identified as a need by an individual Investigation Team, PS/TL, or TWG co-chairs on a temporary or ongoing basis, in order to improve the overall scientific outcome of the mission's science. A scientist whose expertise is needed for a specific task or research area that cuts across two or more investigations may become a Professional Affiliate that is managed by the Project Scientist, with assistance from the Science Manager. Additionally, a Collaborator identified in an original instrument proposal is considered to be a Professional Affiliate of the relevant Investigation Team. A Professional Affiliate generally holds a M.S., Ph.D., or other professional degree. If the scientific expertise of the researcher is critical to the scientific success of a Investigation Team, and not otherwise available to the Investigation Team such

as through a Participating Scientist, then the researcher may be instead or subsequently nominated as a Co-Investigator to the Investigation Team (section 2.1.3.4.).

Addition: When the Project Scientist, PIs, TLs and/or TWG co-chairs have identified a need and an appropriate person for a specific project task or research area, and that person is working beyond the level of a Postdoctoral Researcher, they may be nominated by the relevant PI/TL or (for multi-investigation needs) the Project Scientist, to join the Europa Clipper Science Team as a Professional Affiliate. This can be done either on a no-funds-exchanged basis or with specifically identified project funds. A nomination will be accepted in consultation among the relevant PI(s)/TL(s), the TWG co-chairs, the Project Scientist, and the NASA Program Scientist. As part of the discussions, the expected tasks and term of the Professional Affiliate will be explicitly discussed and agreed upon with the PI/TL and conveyed to the Project Scientist and other relevant parties.

Departure: A Professional Affiliate will remain with the relevant Investigation Team or the Project Science Team, and thus is an affiliate of the Europa Clipper Science Team, until such time as the specific task for which they were involved is complete, or they leave the team for other reasons. The need for Professional Affiliates will be re-evaluated at intervals within the mission lifecycle, such as at the end of Phase D, prior to JOI, after Europa Campaign 1, and after Europa Campaign 2. At these intervals, the nominating party (PI/TL/PS/TWG co-chairs) should justify the retention of each Professional Affiliate.

2.2.2 Post-doctoral (Postdoc) and Graduate Student Affiliates

Role: A Postdoctoral Researcher (postdoc) holds a Ph.D. or equivalent terminal degree, while a graduate student is working toward a post-baccalaureate degree. Postdoc Affiliates and Graduate Student Affiliates are sponsored by and conduct research under the mentorship and management of a specific PSG member who identifies them as participants in an investigation. Rather than becoming an affiliate, if a graduate student or postdoc is spending a limited amount of time with Europa Clipper data, at the discretion of their mentor their Europa Clipper involvement can follow the guidelines of those for an undergraduate student or intern (section 2.3).

Addition: Given the likely length of the project, it is anticipated that a significant number of postdoctoral researchers and graduate students will cycle through the team during the Project lifecycle. Postdocs and graduate students may be added to the Investigation Teams, Project Science Team, or through a Participating Scientist proposal, and therefore to the Europa Clipper Science Team as Team Affiliates, at the written request of the relevant PI, TL, Project Science Team member, or Participating Scientist; Co-Is should bring their requests via the appropriate PI(s)/TL(s), with the nominating Co-I identified. Such requests should identify funding support. Postdoctoral and Graduate Student Affiliate nominees will be considered in consultation among the Project Scientist, PIs, TLs, TWG Co-Chairs, and

NASA Program Scientist, to ensure that their proposed roles are appropriate to the needs and available roles of the science team as a whole. (Note that undergraduate students and student interns are not categorized as Team Affiliates, as per section 2.3.).

Departure: Postdocs and graduate students are considered Europa Clipper Science Team members only until such time as they finish their studies or postdoctoral appointment under the sponsorship of a Europa Clipper Science Team member. Upon departure, they can no longer access science team databases, so they have no access to additional data until it is validated and publicly released through the Planetary Data System (PDS), but they will be able to retain prior data in order to complete Science Team-related projects (e.g., theses or journal papers), and they must continue to abide by the Rules of the Road while doing so. If a Europa Clipper Science Team member believes that a student or postdoc provides critical expertise to the Europa Clipper Science Team, then the graduate student or postdoc might be nominated to continue as a Professional Affiliate or Co-Investigator (see sections 2.2.1 and 2.1.3.4.).

2.3. Undergraduate Students and Interns

Role: Undergraduate Students and Interns work with, and are managed by, Europa Clipper Science Team members on specific finite projects, typically as part of their undergraduate education. Undergraduate Students and Interns are not considered Europa Clipper Science Team members, and as such that they do not have direct access to Europa Science Team databases or data repositories. Instead, they work under the direct tutelage of a Europa Clipper Science Team member, whose responsibility it is to ensure that the student or intern adheres to Europa Clipper Science Team policies, including these Rules of the Road, during the duration of their research project. Students and Interns may attend Europa Clipper PSG and other cross-investigation science team meetings upon approval of the principal organizers of the relevant meeting (i.e., PS, PI/TL, TWG or Focus Group [section 3.1.4] chairs/co-chairs).

Addition: Before obtaining Europa Clipper data through their mentor, an Undergraduate Student or Intern working under a Co-Investigator must have concurrence of the PI(s)/TL(s) with which the relevant Co-I is associated. Project Scientist approval is necessary for involvement of Undergraduate Students or Interns with Participating Scientists or Project Science Team members, but not for mentorship supervised by PIs, TLs, or Co-Is.

Departure: Undergraduate Students and Interns will not have future data access from the sponsoring PSG member or Team Affiliate beyond the completion of their specific finite projects.

Part 3: Europa Clipper Science Team Dynamics

3.1. Thematic Working Groups and Focus Groups

*Europa Clipper Science Team members participate in Thematic Working Groups (TWGs), which, at the time of this writing, comprise the areas of **Habitability**, **Interior**, **Composition**, and **Geology**. These groups are designed to provide a high-level, cross-instrument and cross-discipline, science objective-driven perspective that helps to ensure that the goal and objectives of the Europa Clipper mission are met, and that the highest quality integrated science is achieved. Additionally, Focus Groups (FGs) are groups that are formed to gather information and to study and discuss specific cross-cutting science requirements, policies, and trades as they affect the scientific success of the mission and may be temporary.*

3.1.1. Charge for Goal Thematic Working Group: Habitability

The Europa Clipper's Goal Thematic Working Group is the Habitability Assessment Board (HAB), which is linked to the overall habitability goal of the Europa Clipper Mission. The Habitability Assessment Board is charged with providing a high-level, cross-instrument and cross-discipline, habitability-driven science perspective to help ensure that the Europa Clipper mission can meet its mission goal to investigate Europa's habitability, and that the highest quality integrated science is achieved.

Each member of the Europa Clipper Science Team is considered a member of the Habitability Assessment Board, in order to match the HAB's charge of addressing the overarching goal of the mission.

Starting as soon as possible, but no later than Phase E, HAB will have three co-chairs, representing the broad expertise of the science team, including the three domains represented by the Objective Thematic Working Groups. The rotation of these co-chairs will emulate the schedule and procedures of the Objective TWG co-chairs (section 3.1.4)

3.1.2 Charges for Objective Thematic Working Groups: Interior, Composition, and Geology

The charges of the three Objective Thematic Working Groups are linked to the objectives of the Europa Clipper mission.

The Interior Working Group is charged with providing a high-level, cross-instrument and cross-discipline, interior-driven science perspective, to help ensure that the Europa Clipper mission can meet its mission objective to characterize the ice shell and any subsurface water, including their heterogeneity, ocean properties, and the nature of surface-ice-ocean exchange, and that the highest quality integrated science is achieved.

The Composition Working Group is charged with providing a high-level, cross-instrument and cross-discipline, composition-driven science perspective, to help ensure that the

Europa Clipper mission can meet its mission objective to understand Europa's ocean through composition and chemistry, and that the highest quality integrated science is achieved.

The Geology Working Group is charged with providing a high-level, cross-instrument and cross-discipline, geology-driven science perspective, to help ensure that the Europa Clipper mission can meet its mission objective to understand the formation of surface features, including sites of recent or current activity, and characterize high science interest localities, and that the highest quality integrated science is achieved.

3.1.3. Thematic Working Group Membership

All Europa Clipper Science Team members are expected to join at least one Objective TWG, and there is no limit to the number of TWGs (or Focus Groups, section 3.1.3) in which a Europa Clipper Science Team member may participate. The PSG chair (the Project Scientist) and vice-chair (the Program Scientist) are *ex officio* members of all PSG Thematic Working Groups and Focus Groups.

3.1.4. Thematic Working Group Co-Chairs

Each Objective TWG will have two Co-Chairs, while the HAB Thematic Working Group will have three Co-Chairs, starting as soon as possible, but no later than Phase E. Their responsibilities include representing the relevant TWG in science leadership meetings, running regular TWG meetings at Europa Clipper PSG and other science meetings and (as appropriate) by web meeting, presenting recommendations at Europa Clipper meetings, facilitating coordination of multi-investigation publications and presentations (minimizing gaps and redundant overlap among topics), and keeping the Project Scientist apprised of current developments and concerns within their TWG. The TWG Co-Chairs will also interface with the chair(s) of relevant Focus Groups (section 3.1.3) to communicate concerns among themselves and to the Project Scientist.

New Co-Chairs will be nominated by the members of each TWG and selected by the Project Scientist with the concurrence of the NASA Program Scientist. Diversity in all aspects is expected of the TWG Co-Chairs.

With the exception of the first round of Co-Chairs, who will nominally serve for a term of 2–3 years, each Co-Chair will nominally serve a term of approximately 2 years, and for at least 4 in-person or remote PSG meetings, unless circumstances such as PSG meeting cadence dictate otherwise. The terms of the Co-Chairs will be staggered with respect to each other, so that there is always one continuing Co-Chair serving in this position for each TWG. The purpose of Co-Chair rotation is to (a) bring in fresh ideas to the TWGs on a regular basis; (b) ensure that a diversity of Europa Clipper Science Team members have the opportunity to serve as TWG Co-Chairs, (c) provide leadership and growth opportunities for team

members, and (d) draw on the broad expertise of the Europa Clipper Science Team. If a TWG Co-Chair needs to step down for any reason before the anticipated completion of their term of service, a new Co-Chair will be selected in the manner described above and they will serve as near a full term as practical, given the desire to stagger Co-Chair terms. Co-Chairs are expected to divide up tasks as they see fit and as agreeable to the relevant parties. Utilizing expertise and experience from past Co-Chairs is encouraged, especially during times of Co-Chair transition.

Any Europa Clipper Science Team member, including Team Affiliates, may serve as TWG Co-Chair, and service in these positions will be encouraged. A Europa Clipper Science Team member may serve as a TWG Co-Chair more than once, although not for the same TWG for consecutive terms.

3.1.5. Focus Groups

The Project Scientist may work with the PSG to establish formal or informal “Focus Groups” to gather information and to study and discuss science requirements, policies, and trades as they affect the scientific success of the mission. A Focus Group is considered an advocacy group that is not associated with a particular TWG, but rather communicates with multiple TWGs and the science team at large to advocate for these science interests. A Focus Group must establish a specific task that cross-cuts TWG topics and that is supported by the Project Scientist and TWG Co-Chairs. TWG Co-Chairs and the Focus Group (Co-)Chair(s) will communicate among themselves, the PIs/TLs, and the Project Scientist regarding relevant charges, issues, and findings. Focus Groups tasks will be reevaluated and their continuation evaluated by the Project Scientist and TWG Co-Chairs at intervals within the mission lifecycle, such as at the end of Phase C, end of Phase D, near JOI, after Europa Campaign 1, and after Europa Campaign 2.

The chair (or co-chairs) of such a Focus Group will be selected by the Project Scientist along with the PIs, TLs, and TWG Co-Chairs. The Focus Group Chair(s) will work with the relevant Thematic Working Group(s) and the Project Scientist to prepare a charge to the Focus Group. Diversity in all aspects is expected of the Focus Group (Co-)Chair(s). Focus Group Co-Chair rotation generally follows the same staggered format and reasoning as the Working Group Co-Chair rotation, Co-Chairs are expected to divide up tasks as they see fit and as agreeable to the relevant parties. Utilizing expertise and experience from past Co-Chairs is encouraged, especially during times of Co-Chair transition.

3.1.6. Thematic Working Group and Focus Group Facilitators

TWG and FG Facilitators support the Co-Chairs in leading the TWG/FG. The Facilitator is included in TWG/FG leadership discussions, while recognizing that the Co-Chairs are the ultimate decision makers for their group. Facilitators are responsible for assisting the TWG

and Focus Group (Co-)Chair(s) as tasked, including with setting up and conducting in-person or web meetings, organizing TWG and Focus Group sessions at PSG meetings, updating the PSG website, and representing the TWG or Focus Group on behalf of the (Co-)Chair(s) when appropriate. These tasks may also be shared amongst the TWG or Focus Group leadership. The Facilitator also serves as a local point-of-contact for the project, representing the group to the Project Scientist and relaying project information to the group. Because Facilitators commonly serve for longer terms than Co-Chairs, they also aid in long-term institutional memory of the group, facilitating decision-making and normal operations of the group. Generally, Facilitators are selected from the Project Science team or the Investigation Scientists. There is no specific limitation to the length of Facilitator terms, but it is the expectation that the Facilitators will rotate over time.

3.2. Science Team Meetings

Project Science Group (PSG) meetings and other cross-investigation meetings of the science team are open to all members of the Europa Clipper Science Team. Attendance to the extent possible is considered of high importance for good communication and exchange of information, and for promoting visibility and understanding across the science team.

There will be one to three PSG meetings each year for the duration of the mission. Typically, PSG meetings will alternate being held at or near JPL, and at or near a key Europa Clipper Science Team member's home institution. Europa Clipper Science Team members are expected to make an earnest effort to attend in person and actively participate during in-person and remote PSG meetings. Given that circumstances may prevent some team members from attending the PSG, the project will facilitate remote attendance, within practical constraints.

Each investigation PI and TL should plan to host at least one PSG meeting over the course of the mission. All meeting locations will comply with NASA guidelines including the availability of remote participation.

Additional supplementary cross-investigation science meetings may be held as deemed appropriate, such as thematic science workshops. Such meetings are open to all members of the Europa Clipper Science Team.

Undergraduate Students and Interns may attend science team meetings with the explicit permission of the principal meeting organizers.

All proceedings of the Europa Clipper Science Team are to be considered internal to the Europa Clipper Project until presented and/or published publicly, such as in conference proceedings or peer-reviewed literature.

3.3. Reconciliation

The project places high value on constructive discussion that is focused on necessary tasks and processes. In resolving disagreements, we aim to build productive conversations around disagreement while avoiding the effects of relational conflict.

In any group, professional disagreements may occasionally arise. Disagreements related to tasks, processes, authorships, and scientific priorities and interpretations can be constructive for our team and healthy for science. However, should this conflict spill over into interpersonal relationships, it can be devastating for our team's science and performance.

In cases of disagreement that escalate beyond the task or process at hand, PIs, TLs, and/or TWG Co-Chairs will assist or mediate to facilitate mutual cooperation among team members, and may also assist in establishing procedures for reconciliation if necessary. Any such issues will be addressed with input as appropriate from the Europa Clipper Project Science Team and/or project management.

If a mutually agreeable resolution cannot be reached at a lower level, a final decision will be made by the Project Scientist, in consultation with the NASA Program Scientist as appropriate. Any team member is always welcome to directly approach the Project Scientist or the NASA Program Scientist about any issue or concern; the NASA Program Scientist will engage the appropriate science team personnel and seek a mutually acceptable resolution.

3.4. Compliance with the Rules of the Road

These Rules of the Road are designed to ensure respectful and ethical behavior throughout the lifecycle of the Project; therefore, compliance with this document is expected from all Europa Clipper Science Team members, students, and interns.

All Europa Clipper Science Team members agree to comply with the Rules of the Road (including the Code of Conduct, see section 1). All science team members should hold themselves and others to compliance, and/or encourage bystander intervention for minor or accidental violations. If a Europa Clipper Science Team member's compliance is in question, this should be brought to the attention of that team member, a member of the Project Science Team, and/or an investigation PI or TL, who will engage the appropriate personnel and resources to reconcile the issue (see section 3.3).

If a Europa Science Team member violates the Rules of the Road repeatedly or egregiously, the Project Scientist will consult with the NASA Program Scientist to consider potential paths forward. The team member may be given reduced project responsibilities and, in the extreme case, may be temporarily or permanently banned from Europa Science Team mailing list correspondence, Europa Science Team meetings, and/or other project-

sponsored meetings. An inability to positively contribute to the scientific goal and objectives of the mission in a manner consistent with the Europa Clipper Code of Conduct (see Part 1) could result in removal from the science team by NASA Headquarters.

Subcontractors of Caltech/JPL, including all Europa Clipper Science Team members, are subject to the Caltech policy on unlawful harassment. In the case of a reported issue that falls under this harassment policy (https://hr.caltech.edu/documents/46-citpolicy_harassment.pdf), “Caltech promptly and thoroughly investigates complaints of harassment consistent with legal requirements, and takes appropriate action, including disciplinary measures, when warranted.”

These policies also apply to Undergraduate Students and Interns, as noted in section 2.3.

Part 4: Data Sharing and Publications

4.1. Data Sharing Policies

The uninhibited sharing of data among members of the Europa Clipper Science Team is essential if the highest quality interdisciplinary science is to be accomplished. Data sharing enables multiple datasets and multiple perspectives to be considered in concert and can lead to unexpected insights and better understanding of the processes operating at Europa. Therefore, the Europa Clipper Science Team's data sharing policies aim to encourage cross-instrument, cross-investigation, and multi-expert interactions at all levels. These policies aim to support working relationships, develop partnerships, and engender the trust necessary to support emerging collaborations across the project.

Achieving the Europa Clipper science goal and objectives requires collaboration across the science team. Because most of the science objectives and investigations are inherently multi-disciplinary, multiple instruments and techniques are required to fully address them. Observations that are coordinated among team members and co-registered data sets are fundamental to achieving the science goal and objectives.

In this context, the Europa Clipper *Science Data Management Plan* (JPL D-92253) designates three data types:

- **Collaborative Data Products:** "Quick-look" and other instrument data products that are shared among members of the full Europa Clipper Science Team.
- **Archival Data Products:** Complete, well-documented, permanent data products archived by the Europa Clipper Investigation Teams at the Planetary Data System (PDS).
- **Media Products:** Data products and information distributed to the general public and the other communities served by NASA.

4.1.1. Collaborative Data Products

To support cooperative and synergistic science along with adaptive and efficient mission planning, "quick look" and higher-level instrument data products will be delivered to a PSG database for internal Europa Clipper Science Team and Project use, in a format that is readily accessible by other users. These products are collectively called "Collaborative Data Products."

Collaborative Data Products will be shared internally and will be freely accessible by the entire Europa Clipper Science Team for the purposes of aiding scientific investigations and preliminary discussion among Europa Clipper Science Team members. These products are expected to be the Europa Clipper Science Team's working products and may not be shared

outside of the team. These Collaborative Data Products range from low-level raw and calibrated data products, to "quick-look" data products that can be delivered on the time scale of days to weeks, to higher-level products that may take months or longer to produce. "Quick-look" products are especially important in providing visibility as to new results and will be delivered to a PSG database as soon as practical, with a goal of within several days to two weeks of ground receipt of the science data and required ancillary data.

Collaborative Data Products are not expected to be archive-ready, but should be at a suitable level for aiding scientific investigations across the team. Collaborative Data Products should be as complete as possible and distributed to the Europa Clipper Science Team in a timely fashion, in a readily accessible format, and with appropriate tools provided, such that other science team members can use them for scientific purposes. For example, Collaborative Data Products should be appropriately calibrated and processed and in full spatial and/or time resolution to the extent practical. As discussed in section 4.2.3 below, explicit coordination with the relevant Investigation PI(s)/TL(s) is required in advance of any publication. As appropriate, the reconciliation process of section 3.3 provides further guidance.

Calibration algorithms may change rapidly, and several may be needed for a given dataset. Individual investigation teams must make clear which calibration algorithms have been used to calibrate a given dataset. Investigation teams are also encouraged to update calibration algorithms and files as quickly as feasible, because they affect the ability to effectively share and exchange usable data across the science team. In most cases, the instrument calibration and characterization of known artifacts is expected to stabilize, with fewer changes as the mission progresses. It is expected that some Collaborative Data Products will be further calibrated and improved as the mission progresses.

Investigation teams are required to create and keep up-to-date User Guides, available to the full Europa Clipper Science Team, that describe the instrument datasets and the calibration algorithms applied to them. These User Guides should also be made available to the science community via the Planetary Data System (PDS), as detailed in the *Europa Clipper Science Data Management Plan* (JPL D-92253).

Note that anyone departing the Europa Clipper Science Team (including Co-Is, Project Science Team members, postdocs, and graduate students) will have no further access to science team databases and no further team-related authorship privileges, except under the specific circumstances described in section 2.

4.1.2. Archival Data Products

Data products from all instruments will be delivered by the Investigation Teams and the Project to the Planetary Data System (PDS) in complete, well-documented, permanent archives, referred to as Archival Data Products.

Data products that are formally defined as Archival Data Products include Raw, Calibrated, and Derived Data Products, as well as SPICE files, relevant calibration algorithms, and supporting documentation. These are the products that the Project is contractually obligated to deliver to the PDS on a set schedule defined in the *Europa Clipper Science Data Management Plan* (JPL D-92253).

As per NASA and Project policy, the generation and validation time period for Raw, Calibrated, and Derived Data Products is specified to be no more than 6 months from receipt of telemetry packets containing science raw data and housekeeping and calibration data necessary to produce the data archives, as discussed in the *Science Data Management Plan*. Per prior negotiation with the Project and the PDS, production and validation of some higher-level Derived Data Products, such as maps and digital elevation models, may incur additional time. Investigation teams are encouraged to make Archival Data Products available to the PDS sooner than indicated above, if possible.

Archival Data Products delivered by the Europa Clipper Science Team to the PDS must be in a format that is compliant with the PDS4 standard.

4.1.3. Media Products

Media Products are intended for rapid dissemination of new and significant information by the JPL Digital News and Media Office to the public and include images, derived data products (e.g., spectra, graphics, or topographic information), and other forms of data that illustrate new results of high public appeal. Public distribution of data includes press briefings, posting on the Internet, and written materials concerning mission operations and/or scientific analyses.

The Europa Clipper Science Team, in coordination with the Project Scientist, will deliver to the JPL Digital News and Media Office selected highlights of data that are of high public appeal as a form of Public Outreach, on a timescale of at least once per Europa encounter. At that time, it will be determined whether the highlights deserve release as a news product by the JPL Digital News and Media Office, or whether they should be posted directly to the mission website as an outreach update. Over the course of the mission, it is expected that media products will feature data from each of the science investigations, and media products that feature combinations of data from multiple instruments are encouraged. Production of these products will be coordinated through the PSG, with PIs/TLS serving as the principal points of contact for data that is derived from each of the investigations.

Media Products (such as images, plots, composites, etc.) will be released only with explicit coordination with the Project Scientist or their designee and the relevant Europa Clipper Science Team Members (notably PIs and TLS), within the policies of the Europa Clipper Communications Plan (JPL D- 55458) and the JPL Communications and Education

Directorate. Once released, such data become Media Products and can be used subsequently for public communications without repeating the release process.

4.2. Publication Policies

As the end products of our scientific investigations, it is important that science results be shared with the science community, NASA, and the public as soon as practical. Clear guidelines for the preparation of journal articles and other professional communications are necessary to promote visibility and knowledge across the team. This will ensure effective communication of the scientific results of the Europa Clipper Project and ensure appropriate credit for their interpretation, for all Europa Clipper Science Team members, whether PI, TL, Co-I, Participating Scientist, Affiliate, or Project Science Team member.

It is anticipated that there will be three principal types of publications:

- "First-results" publications
- Single-investigation publications
- Multiple-investigation publications (encouraged)

Other publications include, but are not limited to, calibration papers, review papers (including those in Space Science Reviews), invited papers, and papers led by members of the science community who are not themselves associated with the Europa Clipper Science Team. These other publication types should follow the Europa Clipper publication policy to the extent feasible, as permitted by journal policies.

These publication policies apply to all journal papers, as well as conference abstracts and presentations by Europa Clipper Science Team members who used funding and/or data from the Europa Clipper Mission to produce the publication or its results. Herein, "data" is considered to be any Europa Clipper observations, capabilities, predictions, data products, instrument specifications, or mission data, whether publicly available or not.

A summary of how the science team publications policies apply to different types of papers is provided in the publications flow chart of Figure 2. The purpose of this flow chart is to guide science team members through the publication policies, in order to summarize what is or is not required when authoring a "Europa Clipper paper" (green boxes in Figure 2; see sections 4.2.2 and 4.2.3), a "Shared paper" (yellow box; see section 4.2.4), or another

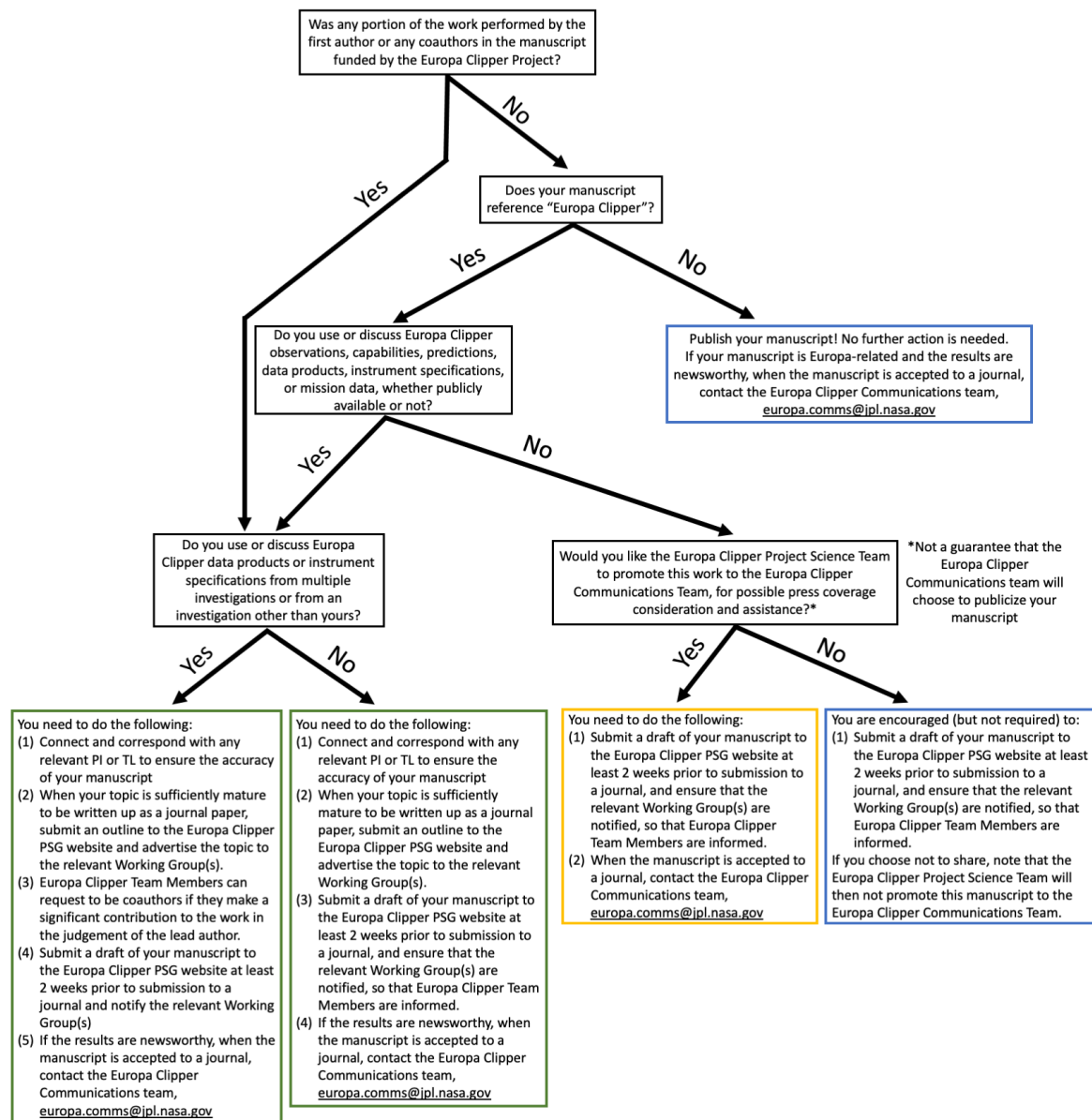


Figure 2. Europa Clipper publication policy flow chart. The chart outlines the steps to be followed by any Europa Clipper Team Member who is an author or coauthor on any science manuscript. The purpose of the publication policy is to support an inclusive team environment where everyone is informed. Green boxes denote Europa Clipper publications (sections 4.2.2 and 4.2.3), yellow boxes indicate a shared publication (section 4.2.4), and blue boxes indicate publications that need not be shared with the Europa Clipper Science Team.

potentially relevant paper that might be deemed a “Non-Team paper” (orange boxes). Europa Clipper Science Team members should follow this flow chart for any publication.

The flow chart illustrates that if any portion of the work in the paper is funded by Europa Clipper, then follow the “yes” path; if the work uses or discusses instrument specifications or data products from multiple Europa Clipper investigations, then follow the “yes” path to the left (see section 4.2.3), if not, then follow the “no” arrow to the right (see section 4.2.2). If no portion of the work is funded by Europa Clipper, it may still be considered a Europa Clipper publication, if the paper mentions “Europa Clipper” and uses Europa Clipper data, irrespective of release status of the data (green boxes). “Shared papers” (section 4.2.4; Figure 2, yellow box) are those that mention “Europa Clipper” and do not use Europa Clipper data, but where the science team author(s) choose to share the draft manuscript with the PSG. Though potentially relevant to Europa science, “Non-team papers” (blue boxes) do not mention “Europa Clipper” and/or do not use Europa Clipper data, and the authors have chosen not to share the draft manuscript on the PSG site. All team member papers that use Europa Clipper data, whether funded by Europa Clipper or not, should be considered Europa Clipper publications (green boxes); therefore, manuscript outlines and drafts should be shared on the PSG website, as per Table 1.

As appropriate, any Europa Clipper Science Team member (including graduate students) may be a lead author, and any Europa Clipper Science Team member can request to contribute to any paper in preparation. Authorship will include any Europa Clipper Science Team member and any other personnel (within or beyond the Europa Clipper Project) who have made a significant contribution to the current work, in the considered judgment of the paper's lead author, with the reconciliation process of section 3.3 providing further guidance. Should a student (graduate or undergraduate) be the primary author, the student's mentor should assist with a mediating role during this Europa Clipper publication process.

The full Europa Clipper Science Team will be presented with the opportunity to contribute to any multiple-investigation scientific publications in ways appropriate and practical, notably during TWG interactions. At the same time, papers with distinct viewpoints and conclusions will be encouraged, such that team members can produce alternative view publications.

As with all scientific publications, any Europa Clipper publication authored by a Europa Clipper Science Team member is expected to respect the intellectual property of others by giving proper attribution to others' ideas and work (notably through citation).

With recognition that details and even titles may change, outlines or rough-drafts of manuscripts will be posted on the PSG website when they are sufficiently mature to be written up as a journal paper, as per the flowchart in Figure 2 to ensure communication and

Table 1: Publication and Presentation Posting Deadlines and Coordination Level

Type of publication or presentation	Calendar days prior to submittal for posting to PSG website	Coordination Level
High-profile journals	14 (full text)	PS, PI/TL, & TWG
Single-Investigation papers	14 (full text)	PI/TL & TWG
Multiple-Investigation papers	14 (full text)	PI/TL & TWG
Single-Investigation conference abstracts	7 (title only)	PI/TL & TWG
Multiple-Investigation abstracts	14 (title only)	PI/TL & TWG
"First-result" and "sensitive subject" conference abstracts	7 (draft text)	PS, PI/TL, & TWG
Public speaking events	N/A	Project Comms Team
Technical publications (e.g., calibration, other technical papers)	Upon submittal	PI/TL

visibility for ongoing projects. Moreover, mature drafts of all relevant manuscripts will be posted on the PSG website before they are to be submitted, subject to the review timetable outlined in Table 1. This ensures that the Europa Clipper Science Team is informed of up-and-coming publications, allows the Project Scientist and Investigation PIs/TLs to evaluate the data analyses for quality, permits science team members to request co-authorship if they believe they have made or can make a significant contribution to the work, and allows identification of gaps or redundant overlap among in-progress projects. Honoring the review timetable also ensures sufficient opportunity to coordinate publication of the breadth of mission results, and their presentation at key conferences. In the case of rapid-turnaround papers, including high-profile journals or student-led publications, the first author must clearly set any timetable expectations by emailing the relevant TWG membership(s) and/or communicating with the relevant TWG Co-Chairs.

Each publication that is funded at least in part by Europa Clipper and contains an acknowledgements section shall include the statement:

This work was supported by NASA through the Europa Clipper Project.

Prior to JOI, the Europa Clipper Science Team will define a unified policy for data credit, to include provision of appropriate credit to those who obtain and process the data.

The search for life beyond Earth is an especially sensitive subject, given the great significance and appeal of this topic to the press and public. For any publications with

conclusions directly pertinent to the topic of life, the Project Scientist, lead author, and relevant PI(s)/TL(s) shall consult before submittal to discuss and agree upon scientifically appropriate language for conveying the results. The Europa Clipper Project Scientist will make the NASA's Europa Program Scientist aware of any forthcoming publications that arise on especially sensitive subjects, with significant lead time prior to their publication.

4.2.1. "First-Results" Publications and Special Issues

Following the practice of previous flagship missions, the Europa Clipper Science Team will most likely publish sets of papers associated with key project events, such as the first orbit(s), discoveries such as of activity, or the end of Europa Campaign 1 (EC1). The Project Scientist will negotiate with appropriate high-profile journals to publish individual or series of papers that cover the major findings of these key periods, with authorship open to anyone on the Science Team who has made a contribution to the scientific findings or planning described in the papers.

"First-results" publications will describe significant new results from individual or multiple investigations as new tools or techniques are applied to Europa for the first time, or upon discoveries that occur at any time during the mission. Such publications will be targeted at especially high-profile journals. The topics and scope of such "first-results" publications will be coordinated by the Project Scientist in collaboration with the PIs, TLs, and TWG Co-Chairs, to minimize gaps and redundant overlap among publications. First-results publications may include single-investigation or multiple-investigation publications, and may include high-profile thematic publications focused around TWG topics.

The Project Scientist will determine and negotiate into which journal that first-results papers are submitted. High-profile journals are quite selective, and the number of publications they accept on a topic or from a given mission are limited. Thus, any editor discussions regarding submittal to such high-profile journals must be in consultation with, and the prior written approval of, the Project Scientist. First-results publications will include as coauthors any Europa Clipper Science Team members and any other personnel who have made a significant contribution, in the considered judgment of the paper's lead author, with the reconciliation process of section 3.3 providing further guidance.

Similarly, there may be special issues, which are collections of papers related to a project event, discovery, or milestone. These will be negotiated by the Project Scientist, or by a designee, with the same guidelines as first-results papers.

With recognition that details and even titles may change, outlines or rough-drafts of first-result manuscripts will be posted on the PSG website when they are sufficiently mature to be written up as a journal paper. Moreover, mature drafts of all manuscripts will be posted on the PSG website before they are to be submitted, subject to the review timetable outlined in Table 1.

4.2.2. Single-Investigation Publications

PIs and TLs will coordinate single-investigation publications and presentations, to minimize gaps and redundant overlap. Authorship of single-investigation publications will be determined by the first author with approval by the relevant PI/TL. It is expected that the person who performs the bulk of the work will receive lead authorship. It is encouraged that those people who have contributed to the acquisition of instrument data be included as co-authors. Single-investigation publications may include other Europa Clipper Science Team members and any other personnel who have made a significant contribution, in the considered judgment of the paper's lead author, as appropriate.

Any editor discussions regarding submittal to high-profile journals must be in consultation with, and with the prior written approval of, the Project Scientist.

With recognition that details and even titles may change, outlines or rough-drafts of manuscripts will be posted on the PSG website for visibility when they are sufficiently mature to be written up as a journal paper (Figure 2, green box). Moreover, mature drafts of all manuscripts will be posted on the PSG website for visibility before they are to be submitted, subject to the review timetable outlined in Table 1.

4.2.3. Multiple-Investigation Publications

When the data used in a multi-investigation study is prepared for publication, the TWG Co-Chairs are encouraged to facilitate and coordinate publications at a high level, to minimize potential gaps and redundant overlap among publication topics. It is expected that the person who performs the bulk of the work will receive lead authorship.

Investigation PIs and TLs must be explicitly made aware of the use of relevant and substantive instrument data in a publication, well in advance of the publication. Recall that “data” is defined as any Europa Clipper observations, capabilities, predictions, data products, instrument specifications, or mission data, whether publicly available or not. To avoid misinterpretations, it is strongly encouraged to include at least one co-author from each relevant Investigation team involved in the work.

Any member of the Europa Clipper Science Team may participate in a multi-investigation research study and resultant publication if they are willing and able to contribute in a constructive and substantive manner. Significant contributions shall be reflected in co-authorship, in the considered judgment of the paper's lead author, with the reconciliation process of section 3.3 providing further guidance.

Any issues regarding publication matters ideally should be resolved among the lead author, PIs, TLs, and TWG Co-Chairs. If PIs, TLs, and TWG Co-Chairs cannot come to consensus, they will work with the Project Scientist to determine the most effective outcome for the scientific integrity and overall scientific success of the Project.

Any editor discussions regarding submittal to high-profile journals must be in consultation with, and the prior written approval of, the Project Scientist.

With recognition that details and even titles may change, outlines and rough-drafts of manuscripts will be posted on the PSG website when they are sufficiently mature to be written up as a journal paper as per Figure 2 (green box). Moreover, mature drafts of all relevant manuscripts will be posted on the PSG website before they are to be submitted, subject to the review timetable outlined in Table 1.

4.2.4. Shared Papers

Even if an intended publication does not use Europa Clipper funding and/or data, the authors have the potential for publication promotion through the Europa Clipper Communications Team by posting a draft of the manuscript to the PSG website more than 14 days before submittal (see Figure 2, yellow box). This incentive fosters a ‘one team’ environment, where each team member is informed of what the others are researching and publishing.

4.2.5. Authorship Involving Participants Beyond the Europa Clipper Science Team

In the spirit of cooperation among members of the Europa Clipper Science Team in functioning as a unified team, the Rules of the Road on publications apply whether the relevant data is in the PDS or not, for all instances where the policies of section 4.2 apply. If a study using Europa Clipper data products involves participation of any science community member beyond the members of the Europa Clipper Science Team, then the coordinating author is to ensure that the community member(s) are provided, read, and uphold these Rules of the Road.

If a research project is initiated by a member of the science community who is not part of the Europa Clipper Science Team using publicly released Europa Clipper data, and a Europa Clipper Science Team member is invited to participate, the Europa Clipper Science Team member is expected to uphold the spirit of these Rules of the Road by facilitating communication between the paper's authors and the Europa Clipper Science Team via the relevant PIs/TLS and Thematic Working Group(s).

4.2.6. Conference Presentations

Conference abstracts are commonly prepared close to the submittal deadline, and it is important not to limit team member participation. For presentations at scientific conferences or workshops that describe results stemming from Europa Clipper mission participation, a working title and candidate authorship should be submitted to a provided Europa Clipper science database, with a goal of 7 days prior to the submittal deadline, with the final title and authorship updated following the abstract deadline (if necessary). If the abstract involves data from multiple investigations, the working title and candidate

authorship should be posted with a goal of 14 days prior to the submittal deadline. This process will foster Europa Science Team interactions, including soliciting of potential co-authors, and will help to ensure visibility of research topics across the team.

Most conference abstracts will not be subject to a PSG review. Only those conference abstracts describing major "first results," or those addressing "sensitive subjects," would require coordination with the Project Scientist, PIs/TLs, and TWG Co-Chairs. The draft text of such abstracts shall be posted to the PSG website at least 7 days prior to submittal, as summarized in Table 1.

4.2.7. Technical Publications

Instrument and calibration publications should be coordinated with the relevant PI/TL, and do not require other PSG review (Table 1). However, these publications should still be posted to the PSG website upon submittal, to ensure that they are available for reference by the Europa Clipper Science Team. Such publications are expected to include as authors engineers who offer substantive technical expertise. Authors from the relevant engineering team(s) will be included as the, PS, PI/TL, and/or lead author deems appropriate, based on their contributions.

4.2.8. Export Control Restrictions

As applicable to any publication, no photos, drawings, or information may be released in any medium that might violate Export Administration Regulations (EAR) or International Traffic in Arms Regulations (ITAR). If such material should inadvertently appear on public websites, it would become available worldwide, in violation of United States law.

If a team member is unsure about whether content violates export control regulations, they should first consult with their institutional export control expert, and where necessary, Europa Clipper Science Management, for guidance.

4.3. Communications Policies

The Europa Clipper mission is of extremely high public and political interest. While public outreach is strongly encouraged, all Europa Clipper Science Team members should remember that they may be viewed as representatives of the Europa Clipper mission, and they should not "make news" as part of public engagement efforts or when using social media.

4.3.1. Public Engagement Efforts

Public engagement is strongly encouraged and supported by the Europa Clipper Project and the JPL Digital News and Media Office. Europa Clipper mission team members are encouraged to support public speaking events, which allows for direct opportunities for engagement with students and the general public. Public speaking events are any events

that are open for the general public, such as exhibitions, conventions, and festivals. Such speaking engagements should be socialized with the Project Communications team in advance of the event, and afterwards, the speakers should report the appropriate outreach metrics (i.e., number of attendees) to the public engagement database. In addition, notice of these appearances should be shared with the speaker's organization's public affairs officer and outreach teams.

Public speaking events must not be used to break news about the mission, and materials must be reviewed in advance for compliance with U.S. Export Regulations and/or the speaker's institution's public release process. Public talks do not need to be approved by any other Europa Clipper Science Team member, so long as they use only published data or the presenter's own analyses. It is encouraged that such public talks be made available to the Europa Clipper Science Team via the PSG website.

4.3.2. Coordination of News and Information Release

JPL's Digital News and Media Office will coordinate all media products involving the mission, such as news releases, web features, advisories, media kits, and video and image materials. Partner institutions, home institutions, and/or agents for Europa Clipper Science Team members and contractors are required to coordinate *any public affairs efforts* with NASA via the JPL Media Relations Office. Details and timelines are provided in the Europa Clipper Communications Plan (JPL D-55458).

Members of the Science and Engineering Teams may represent the mission in media interviews, as coordinated with the Project Office and the JPL Office of Communications. Team members must follow the restrictions defined within this communication plan before releasing any mission data or news through either social or traditional media channels.

4.3.3. Social Media Policy

The Europa Clipper mission is of extremely high public and political interest. While we strongly encourage public engagement and outreach, all Europa Clipper Science Team members should remember that they may be viewed as representatives of the Europa Clipper mission, and they should not "make news" when using social media. The personal use of social media by mission personnel must follow guidelines set forth by NASA's Office of Communications for the release of potentially newsworthy information. These guidelines for official use and best practices for personal use are available on the PSG website at: <http://europapsg.jhuapl.edu/Communications/Social.php>.

Social media should not be used to share information discussed at Europa Clipper Science Team or Investigation Team meetings, unless explicitly approved by the Project Scientist or relevant PI(s) or TL(s), respectively, and approved for public release.